

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-14 (cancelled)

15. (new) A sample holder for installation in a reaction chamber (22) intended for detecting sample constituents of a sample fluid, comprising:

a holder plate (11) made of an electrically insulating material;

electrically conductive receiving regions (17) located on one side of the holder plate, the receiving regions configured for holding sample constituents of a sample fluid;

electrical contact locations (19) assigned to corresponding ones of the receiving regions and located on the other side of the holder plate, the electrical contact locations facing away from the corresponding receiving regions; and

apertures provided through the plate, via which apertures the contact locations are electrically connected with the corresponding receiving regions.

16. (new) The sample holder of claim 15, further comprising:

inserts (15a, 15b, 15c) located in the apertures, the receiving regions mounted on the inserts on the one side of the holder plate, and

the inserts electrically connecting the receiving regions and the contact locations.

17. (new) The sample holder of claim 16, wherein, the inserts pass through the apertures, and the contact locations are mounted on the inserts on the other side of the holder plate.

18. (new) The sample holder of claim 16, wherein, the inserts, on the one side of the holder plate, have an exterior surface convexly curved.

19. (new) The sample holder of claim 18, wherein, the inserts (15b) have a single convexly curved exterior surface area extending as a spherical cap corresponding to an entire receiving region.

20. (new) The sample holder of claim 18, wherein, the inserts (15c) comprise plural convexly curved surface areas extending as facets over an entire receiving region.

21. (new) The same holder of claim 19, wherein, a radius of curvature of the convexly curved surface area is between 20 and 500 μm .

22. (new) The same holder of claim 20, wherein, a radius of curvature of each of the convexly curved surface areas is between 20 and 500 μm .

23. (new) The sample holder of claim 15, further comprising:

a reference electrode (20) attached on the one side of the holder plate.

24. (new) The sample holder of claim 23, wherein the reference electrode annularly surrounds each of the receiving regions.

25. (new) A reactor for a sample fluid having sample constituents and exchangeably holding a sample holder (23) with electrically conductive receiving regions (17) located on one side of the sample holder, the receiving regions configured for holding sample constituents of a sample fluid, and electrical contact locations (19) assigned to each of the receiving regions and located on the other side of the sample holder, the reactor comprising:

a reaction chamber (22);

an interior sample holder compartment (24) to support the sample holder within the reaction chamber; and

terminal contacts (30) located on one surface of the sample holder compartment, the terminal contacts being positioned for electrical contact with the electrical contact locations of the sample holder.

26. (new) The reactor of claim 25, further comprising:

a reference electrode in the form of a self-supporting electrode grid (33) positioned for parallel alignment with the supported sample holder on the one side of the sample holder.

27. (new) The reactor of claim 26, wherein, the reaction chamber comprising a wall part (32) aligned parallel to the one side of the supported sample holder,

the wall part bearing mounting counter electrodes (31), and

the counter electrodes being positioned to be in alignment with the receiving regions of the supported sample holder.

28. (new) A method of producing a sample holder for installation in a reaction chamber (22) intended for detecting sample constituents of a sample fluid, comprising the steps of:

forming apertures (12) in a holder plate;
within the apertures, forming inserts (15a, 15b, 15c) with electrically conductive receiving regions (17) for holding the sample constituents, the receiving regions being located on a first ends of the inserts and on one side of the holder plate; and

providing electrical contact locations (19) on second ends of the inserts and on the other side of the holder plate, the receiving regions being electrically connected to the electrical contact locations via the inserts.

29. (new) The method of claim 28, wherein, the holder plate comprises silicon, and the apertures are formed by etching of the holder plate.

30. (new) The method of claim 28, wherein, the inserts are formed in the apertures by injection molding.

31. (new) The method of claim 30, wherein, the inserts comprise injected polycarbonate containing graphite, and the apertures serve as a part of an injection mold in injection molding the inserts.

32. (new) The method of claim 28, further comprising the step of immobilizing oligonucleotides on the electrically conductive receiving regions.

33. (new) The sample holder of claim 15, further comprising:

oligonucleotide immobilized on the electrically conductive receiving regions.

34. (new) The sample holder of claim 16, wherein, the inserts have a narrowed mid-region at approximately a horizontal centerline of the holder plate.